

WHAT IS CLAIMED IS:

1. The method of detecting disease in a patient comprising screening DNA present in a sample from said patient for at least one mutation in the  $\alpha_{1a}$ adrenergic receptor ( $\alpha_{1a}$ AR) gene, the presence of said mutation being indicative of disease or predisposition to disease.
2. The method according to claim 1 wherein said disease is a cardiovascular disease, a psychiatric disease, or cancer.
3. The method according to claim 2 wherein said disease is hypertension, atherosclerosis, or myocardial hypertrophy.
4. The method according to claim 1 wherein said disease is benign, prostatic hypertrophy.
5. The method according to claim 1 wherein said mutation is a point mutation.
6. The method according to claim 5 wherein said point mutation results in an amino acid substitution in the encoded  $\alpha_{1a}$ AR.
7. The method according to claim 6 wherein said point mutation results in the substitution of arginine for glycine<sup>247</sup>.
8. A method of detecting the presence of disease in a patient comprising:
  - i) obtaining a biological sample from said patient; and
  - ii) screening said sample for a mutant  $\alpha_{1a}$ AR,

the presence in the sample of said mutant  $\alpha_{1a}$ AR being indicative of the presence of disease or predisposition to disease.

9. The method according to claim 8 wherein the sample is a biological fluid or tissue sample.

10. The method according to claim 9 wherein said sample is a biological fluid and said fluid is plasma, serum, urine, lung lavage, ascites fluid, saliva or cerebrospinal fluid.

11. The method according to claim 9 wherein said sample is a tissue sample.

12. The method according to claim 8 wherein said screening is effected by contacting said sample with a compound that forms a complex with said mutant  $\alpha_{1a}$ AR under conditions such that the complex can form, and determining whether any such complex forms.

13. The method according to claim 12 wherein said compound is a binding protein.

14. The method according to claim 13 wherein said binding protein is an antibody or binding fragment thereof.

15. The method according to claim 8 wherein said disease is a cardiovascular disease, a psychiatric disease, or cancer.

16. The method according to claim 15 wherein said disease is hypertension, atherosclerosis, or myocardial hypertrophy.

17. The method according to claim 8 wherein said disease is benign, prostatic hypertrophy.

18. An isolated antibody specific for a mutant  $\alpha_{1a}$ AR.

19. The antibody according to claim 18 wherein said antibody is a monoclonal antibody.

20. A kit for use in the detection of a mutant  $\alpha_{1a}$ AR comprising a compound that specifically binds to said mutant  $\alpha_{1a}$ AR disposed within a container means.

21. A method of detecting disease in a patient comprising contacting a biological sample from said patient with at least one mutant  $\alpha_{1a}$ AR under conditions such that said mutant  $\alpha_{1a}$ AR can bind to autoantibodies thereto present in said sample to form a complex, and detecting the presence of said complex,

wherein the presence of said complex is indicative of disease or predisposition to disease.

22. The method according to claim 21 wherein said disease is a cardiovascular disease, a psychiatric disease, or cancer.

23. The method according to claim 22 wherein said disease is hypertension, atherosclerosis, or myocardial hypertrophy.

24. The method according to claim 21 wherein said disease is benign, prostatic hypertrophy.